

ROY ROMER
Governor



JERIS A. DANIELSON
State Engineer

**OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES**

1313 Sherman Street-Room 818
Denver, Colorado 80203
(303) 866-3581



000024658

November 14, 1988
**NOTICE OF THE REQUIREMENT FOR
EMERGENCY PREPAREDNESS FOR
CLASS I (HIGH HAZARD) AND CLASS II (MODERATE HAZARD) DAMS**

With the advent of Emergency Preparedness Plans (EPP) becoming a necessary part of a dam owner's safety program in accordance with the Regulations for Dam Safety and Dam Construction (effective September 30, 1988), we have identified the key personnel in the Division of Water Resources that should be included in the Emergency Preparedness Plan for your dam. If you have not already been requested by us to prepare a plan, this notice constitutes our request for you to do so. A copy of a Model Emergency Preparedness Plan, as amended, which was prepared by our office for your use, is enclosed.

The plan should include actions to be taken in case of impending or partial failure of your dam (i.e., slides, excessive seepage, overtopping by flood waters, etc.). It must also include a dam failure inundation map for Class I dams, and a topographic map showing the stream which will be flooded for Class II dams. You should plan on having the EPP reviewed and approved by all the emergency agencies who will take part in it. Your local emergency coordinator can assist you in identifying these persons. The coordinator for your area may be located by calling Ms. Pat Hagan of the Disaster Planning Section of the State Division of Disaster Emergency Services (DODES) at (303) 273-1780. DODES has already notified local coordinators of this program and requested their participation.

The primary contact in the State Engineer's office (Division of Water Resources) is Mr. Alan Pearson, Chief of the Dam Safety Branch. The telephone number is (303) 866-3581 during business hours, 8 a.m. to 5 p.m., Monday through Friday. Alan's home phone is (303) 752-2924 after hours. If Alan Pearson cannot be contacted, the following personnel shall be contacted in listed order

<u>Name</u>	<u>Title</u>	<u>Office Ext.</u>	<u>Home #</u>
Gary Barta	Chief, Field Engineering Unit 1	866-2594	451-8868
John Van Seiver	Chief, Field Engineering Unit 2	866-3730	789-3174
Steve Spann	Chief, Design Review Unit	866-4891	781-2430

SW-A-003811

ADMIN RECORD

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Our Division Engineer's office and Water Commissioners should be included as recommended in our Model Emergency Preparedness Plan.

You may include other members of the Division of Water Resources as you wish to have them noted, such as the State Engineer, but the primary and secondary contacts should be identified so that we may react to the incident as quickly as possible.

If you have any questions, contact Mr. Gary Barta, Mr. John Van Sciver or me at (303) 866-3581.



Alan E. Pearson, P.E.
Chief, Dam Safety Branch

Enclosure
cc: Division Engineers
DODES
AEP/GGH:ict/84241

COLORADO DIVISION OF WATER RESOURCES

GUIDELINE FOR A
DAM SAFETY EMERGENCY PREPAREDNESS PLAN (EPP)

By John T. Schurer, P.E.
Field Engineering Unit
Dam Safety Branch
Revised October 1988
by Greg Hammer

INTRODUCTION

- a. Goal - An emergency preparedness plan is a written procedure for reacting to emergency situations caused by the threat of a dam failure. The goals of the plan are.

1. To prevent loss of life.
- 2 To minimize property damage.

Keeping a dam from failing is the most assured way to prevent loss of life and property damage. Therefore, emphasis must be placed on saving the dam from failure

- b. Responsibility - The dam owner is responsible for drafting the plan, coordinating emergency actions, and activating the plan immediately when a failure threatening situation is reported

- c. Requirement

Class I (High Hazard) Dams - sudden failure of the dam would cause the loss of life In the interest of public safety the State Engineer has required written plans for these dams The plan includes evacuation of persons located in the dam breach flood plain.

Class II (Moderate Hazard) Dams - sudden failure of the dam would not cause loss of life but would cause extensive property damage. Since the owner of the dam is responsible for damages caused by the uncontrolled release of water from a dam failure, a written plan is also required

Class III (Low Hazard) Dams - sudden failure would cause little loss other than the structure itself. A written plan is recommended to allow the best chance to save the dam and avoid costly reconstruction.

- d. Result

By planning in advance for quick and prudent action and by devising an effective timely warning to downstream residents, the disastrous results of a dam failure can be avoided.

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GENERAL INFORMATION

Addressing an emergency situation will require the cooperation of many persons and entities. This list is provided to alert the owner to those that may be involved.

LOCAL PARTICIPANTS -

- Local disaster emergency coordinator
- The dam's owners, shareholders and beneficiaries
- Officials of the nearby downstream cities and towns
- Local Police, County Sheriff
- Local Fire Departments
- County Highway Department Personnel
- Local Construction Companies
- News Media serving the area; i.e., radio, TV, newspapers
- Nearby Engineering Firms
- Professional Diving Service
- Helicopter Service
- Hospital and/or Ambulance Service

STATE AGENCIES -

Division of Water Resources

- State Engineer
- Dam Safety Branch
- Local Water Commissioner
- Division Engineer

- Division of Disaster Emergency Services (DODES)
- State Patrol
- Department of Highways
- Department of Health

FEDERAL AGENCIES -

- U.S. Forest Service
- Bureau of Reclamation
- National Park Service
- Soil Conservation Service
- U.S. Army Corps of Engineers
- Federal Bureau of Investigation
- Federal Energy Regulatory Commission
- U.S. Geological Survey
- Federal Emergency Management Agency

A directory of these and any other agencies involved should be established which lists the home phone, address and office phone of the primary and secondary contacts for each as well as a listing of the equipment and/or service they can provide and stating an estimate of their response time. This directory should be updated as needed. An example will be found on page 15

In accordance with the State Engineer's regulations the plan must be submitted to DODES and all local emergency coordinators for their review and comment. The owner shall incorporate reasonable recommendations received within 60 days. The owner shall also review and update the EPP as necessary annually.

REPORTING INCIDENTS

Dam Incidents should be reported immediately by the person discovering the dangerous condition to the person responsible for executing the emergency plan. (Listed on the data sheet and in the EMERGENCY PLAN).

In order to be able to properly identify a potentially dangerous condition, it is necessary that dam tenders and others who visit the site regularly are familiar with all features of the dam and dam site. This is especially true for dams with a history of leakage, cracking, settlement, misalignment, and erosion from wave action. Also, it is necessary to have a knowledge of measurements of significant drain and seepage outflows to act as a basis for meaningful comparisons

(When reporting a dam incident, remember that when locating problem areas, all directions, i.e., "left of" or "right from" are taken while facing downstream.)

Items that should be reported are

1. Name of Dam, Lake, or Reservoir, and River, Stream, or Tributary the dam is located on.
2. Location from highway or nearest town (U.S., State, or County Road Numbers) also Section, Township, Range, and PM, if known.
3. Nature of the problem, i.e., excessive leakage, cracks, sand boils, slides wet spots, etc.
4. Location of problem area in terms of embankment height, (i.e., about 1/3 up from toe) and location along the dam's crest (i.e., 100 feet to the right of the outlet or abutment) and whether on the upstream slope, crest or downstream slope.
5. Extent of the problem area. This can be satisfactorily established by pacing.
6. Estimated quantity of unusual flows as well as whether the water is clear, cloudy, or muddy.
7. Water level in the reservoir below the dam's crest or below the spillway, or the guage rod reading.
8. Is water level in reservoir rising or falling?

- 9 Name and how to contact person making report.
10. Did the situation appear to be worsening while being observed for this report?
11. Does the problem appear to be a containable problem at this time or is it an emergency situation?
12. What are current weather conditions at the site?
13. Anything else that seems important?

A reporting form will be found on Page 12.

This list should be periodically reviewed by the owner's representatives who frequently visit the dam site. It will alert them to make all these observations before reporting the incident. An accurate report will allow an intelligent assessment of the situation and proper implementation of the plan

SITUATIONS TO BE ADDRESSED

The response to each situation, either by taking remedial action or notifying authorities, will be dependent on the severity of the situation. The actions should be defined for each of these circumstances so that proper action is taken, without causing alarm in unnecessary circumstances. The situations should be anticipated, and the response actions specified.

- A. CONDITION OF ALERT - This is a condition where some change has been observed, or is expected to occur. Examples may be knowledge of heavy rain or flooding upstream of the dam, or turbidity in seepage without increased flow. In these cases increased monitoring of the situation is warranted and limited notification is expected (i.e , owner's engineer, dam safety branch).
- B. FAILURE PENDING - In this situation the safety of the structure is in jeopardy, but remedial action can save the dam. The priority during this state is to take action to save the dam, while alerting appropriate authorities that emergency response may be needed later.
- C. FAILURE IMMINENT - This situation is considered to be the threshold of failure. It is identified by continued deterioration of the dam, or worsening of conditions. In this condition it is still possible to save the dam with proper remedial actions. Authorities need to be notified to prepare for evacuation.
- D. FAILURE IN PROGRESS - The dam can no longer be saved. In this condition notification of downstream entities is required for immediate evacuation

POTENTIAL PROBLEMS AND IMMEDIATE DEFENSIVE ACTIONS

(To be taken before or while a detailed engineering assessment is made.)

A thorough EPP should provide the owner or caretaker with appropriate instructions to resolve an observed condition. These instructions may be as simple as opening the outlet with nothing more to be done, or as complex as initiating remedial work and notifying the proper authorities. Listed below are commonly observed circumstances which should be addressed in the EPP. As earlier mentioned, the severity of the condition will dictate which actions should be implemented.

A. OVERTOPPING BY FLOOD WATERS

1. Fully open outlet to reduce overflows.
2. Place sandbags along the crest to increase freeboard and force more water through the spillway and outlet.
3. Provide erosion resistant protection to the downstream slope by placing plastic sheets or other materials over eroding areas.
4. Divert flood waters around the reservoir basin, if possible.
5. Create additional spillway capacity by making a controlled breach in a low embankment or dike section where the foundation materials are erosion resistant

B. LOSS OF FREEBOARD OR DAM CROSS-SECTION DUE TO WAVE EROSION CAUSED BY HIGH WINDS

1. Lower water level to an elevation below the damaged area
2. Immediately place additional riprap or sandbags in damaged areas to prevent further embankment erosion.
3. Restore freeboard with sandbags or earth and rockfill
4. Continue close inspection of the damaged area until the storm is over

C. SLIDES IN THE UPSTREAM OR DOWNSTREAM SLOPE OF THE EMBANKMENT

1. Lower water level at a rate and to an elevation which are judged to be safe for the slide condition. If the outlet is damaged or blocked then pumping, siphoning or a controlled breach may be required.
2. Restore lost freeboard if required. This may require placing sandbags or fill on top of the slide. This section could adversely affect its stability and should be done in conjunction with 3.
3. Stabilize slides on the downstream slope by weighting the toe area with additional soil material, rock or gravel.

D. FLOWS THROUGH THE EMBANKMENT, FOUNDATION, OR ABUTMENTS WHICH ERODE THE MANMADE OR NATURAL MATERIAL CONTAINING THE RESERVOIR

1. If the entrance area of the leak in the reservoir basin can be found, try to plug it off with whatever materials are available such as hay-bales, manure, mattresses, bentonite, plastic, etc.

2. Lower the water level until the flows decrease to a non-erosive velocity or until the flow stops.
3. Place a protective sand and gravel (and large rock if necessary) filter over the exit area to hold materials in place.
4. Continue lowering the water level until an elevation judged to be safe is reached.
5. Continue operating at a reduced level until repairs can be made

E. FAILURE OF APPURTENANT STRUCTURES SUCH AS THE OUTLET OR SPILLWAY

1. Implement temporary measures to protect the damaged structure, such as closing the outlet or providing temporary protection for the damaged spillway area
2. Experienced professional divers may be able to quickly assess the problem and possibly implement repair.
3. Lower the water level to an elevation judged to be safe. If the outlet is inoperable, then pumping, siphoning or a controlled breach may be required.

F. MASS MOVEMENT OF THE DAM ON ITS FOUNDATION, I.E., SPREADING OF FOUNDATION OR MASS SLIDING FAILURE

1. Immediately lower water level until excessive movement stops.
2. Continue lowering water until a level judged to be safe is reached
3. Continue operating at a reduced level until repairs can be made.

G. HIGH LEVEL SATURATION OF THE ENTIRE EMBANKMENT CROSS-SECTION DUE TO EXCESSIVE SEEPAGE

1. Lower the water to a level which is judged to be safe
2. Continue frequent monitoring for signs of slides, cracking, or concentrated seepage.
3. Continue operation at a reduced level until repairs can be made

H. SPILLWAY BACKCUTTING THREATENS RESERVOIR EVACUATION

1. Reduce flows over the spillway by fully opening the outlet
2. Provide temporary protection at the eroding surface by placing sandbags or riprap material.
3. When inflows subside, lower water to a level judged to be safe.
4. Continue operating at a low water level in order to prevent spillway flows

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I. EXCESSIVE SETTLEMENT OF THE EMBANKMENT

1. Lower water level by releases through the outlet or by pumping, siphoning, or a controlled breach.
2. If necessary, restore freeboard, preferably by placing sandbags.
3. Continue lowering water to a level judged to be safe.
4. Continue operating at a reduced level until repairs can be made.

J. LOSS OF ABUTMENT SUPPORT OR EXTENSIVE CRACKING IN CONCRETE DAMS WHICH COULD CAUSE SUDDEN FAILURE

1. Lower the water level by releases through the outlet.
2. Attempt to block water movement through the dam by placing plastic sheets, etc., on the upstream face.
3. Prepare to notify and evacuate downstream residents.
4. Continue lowering water to a level judged to be safe.

HELPFUL SUGGESTIONS

Following are suggestions for making a controlled breach, sandbagging and plastic sheet placement.

CONTROLLED BREACH

One method of making a controlled breach is to construct a small coffer dam upstream from the breach area. Then excavate the breach through the embankment and place appropriately sized pipe through the embankment and backfill around the pipe and re-establish to embankment freeboard. The coffer dam can now be removed and water released through the newly installed pipe.

SANDBAGGING

When placing sandbags in high velocity flow water, it is difficult to keep the bags in place. In order to control water in this situation, it is advisable to:

1. Make sure the bags are securely tied so the material does not wash out of them.
2. Begin placement near the shore or in a quiet area and work toward the higher velocity flow areas.

PLASTIC SHEET PLACEMENT

Plastic sheets normally used in construction have been employed successfully to resist erosion of a dam's downstream slope or spillway channel during storm flows. The top end of the sheet must be securely anchored in a nearly horizontal area such as the crest area, where velocities are low. Closely

spaced sandbags or rocks will anchor the sheet and minimize flow under the sheet. This protection should be extended beyond the dam's toe or the eroding area in the spillway by overlapping with the upper sheet over the lower one and anchoring successive sheets.'

ADDITIONAL CONSIDERATIONS

WARNING TO DOWNSTREAM RESIDENTS

Generally, in more densely populated areas, warning to downstream residents will be carried out through the county sheriff, or town, or city police department. This warning will be initiated by the person executing the emergency plan.

In rural locations the warning may have to be given by phone or direct contact with the nearest downstream residents. When phone communication is not available, the person observing the dangerous condition may have to provide the warning to the nearest downstream residents, campers, etc. A listing of the nearest downstream residents should be kept by the person responsible for implementing the plan and an additional copy kept at the dam site.

RESPONSE TIME

Many of the dams within the state are located in areas where access is very time consuming. In order to properly assess the actual response to an incident at all dams, it is important to establish a realistic estimate of the time that will be required for the various participants in the plan to reach the dam site. This is especially true for the engineers who will be responsible for an accurate evaluation of the situation and recommending on-site remedial actions and subsequent repairs.

FLOOD ARRIVAL TIME

An estimate of the time that it will take for the flood caused by a dam failure to reach the nearest dwelling and downstream town should be made. This will aid in scheduling the sequence of warning and defensive actions. Local water administrators may be of assistance in making this estimate.

NOTIFICATION TO THE DIVISION ENGINEER AND LOCAL WATER COMMISSIONER

When unusual flow due to the controlled or uncontrolled release of water are anticipated, the Division Engineer and/or Water Commissioner should be notified as required in CRS 1973 as amended, 37-87-103. In addition to possibly allowing for minimizing flooding and providing protection of downstream water control structures, these administrative personnel may be able to find a way to regain control of the released water for future use by the affected community.

FLOODED INUNDATION MAPS

Where the floodplain downstream from a large capacity reservoir is heavily populated (Class I dams), it is required that reasonably accurate floodplain maps be made in accordance with the State Engineer regulations which will show the limits of flow for failure of the structure when filled to the spillway.

crest without storm inflow. These are necessary for identifying the actual areas where flooding is anticipated and where evacuation is required. Local flood control districts may provide assistance in the preparation of these maps. For Class II dams, a topographic map is required showing the stream which will be flooded

HELPFUL ITEMS

Items that should be kept at the dam site, or at a home, cabin or storage facility nearby are: a list of the nearest downstream residents affected by flooding and the required method for warning them; a set of drawings that show the basic dimensions and typical cross-sections of the dam; a table showing spillway discharge capacity and volume of surcharge storage for each foot of water above the spillway crest (This will be useful in predicting the magnitude of flows that will be experienced downstream.) and a copy of recent leakage quantities or other pertinent monitoring data.

Additional items that are recommended at the dam site are.

1. A high intensity light source to facilitate night inspection. A spotlight with a minimum of 200,000 candlepower with an appropriate battery-pack would be good for this.
2. An annual log of repairs or major maintenance.
3. Photographs of snow drifts which accumulate on and may saturate portions of the dam should be taken annually and a file kept for comparison and reference.
4. An identification plate stating the dam name, and name and phone number of the emergency contact person should be displayed at the site. As an example, this plate could be securely fastened to the outlet control works.

SAMPLE FORMS

In order to assist the owner in preparing an emergency plan a number of forms are presented

- a. **DATA SHEET** - Provides basic information about the dam, reservoir and downstream hazard including the nearest downstream residents. Each person participating in the plan should be familiar with this information.
- b. **REPORT FORM** - This is for the use of persons implementing the plan who did not see the dangerous condition that is threatening the dam. When the form is filled out by the person executing the plan it will help assure that each participant gets the same information about the situation.
- c. **EMERGENCY PLAN** - The emergency plan provides an outline of the help various entities will provide along with their arrival times to the dam site. This is the heart of the Emergency Preparedness Plan and each person involved in the plan should have a copy and be familiar with its contents.
- d. **DIRECTORY** - The directory allows quick reference for the contacts that must be made in reviewing, activating and updating the plan. The directory must always be up-to-date. The person responsible for drafting the plan is usually responsible for keeping it current.

DATA SHEET

NAME OF DAM _____

NAME OF DAM OWNER _____

*OWNER'S REPRESENTATIVES RESPONSIBLE FOR EXECUTING THE EMERGENCY PLAN

	<u>Name</u>	<u>Position</u>	<u>Contact at Phone</u>
* 1.	_____	_____	_____
* 2.	_____	_____	_____

PERSON RESPONSIBLE FOR DRAFTING AND UPDATING THIS PLAN _____

DAM LOCATION: _____ Sec. _____ Township. _____ Rng. _____ PM _____

RIVER OR STREAM _____ COUNTY _____

FOREST OR OTHER _____

NEAREST TOWN IN FLOOD PLAIN _____

ESTIMATED TIME FOR FLOOD TO REACH NEAREST TOWN _____ HR

ESTIMATED TIME FOR FLOOD TO REACH NEAREST HOME _____ - _____ HR

DIRECTIONS FROM TOWN TO DAM _____

DAM HEIGHT: _____ FT. CAPACITY: _____ A.F.

SURFACE AREA: _____ A.C. HAZARD RATING: _____

CREST LENGTH: _____ FT. CREST WIDTH: _____ FT.

MAX OUTLET CAPACITY _____

SPILLWAY CAPACITY FOR EACH FOOT OF DEPTH

<u>Depth</u>	<u>Surcharge Storage</u>	<u>Service Spillway Capacity</u>	<u>Emergency Spillway Capacity</u>
1 ft.	_____ AF	_____ CFS	_____ CFS
2 ft.	_____ AF	_____ CFS	_____ CFS
3 ft.	_____ AF	_____ CFS	_____ CFS
4 ft.	_____ AF	_____ CFS	_____ CFS
5 ft.	_____ AF	_____ CFS	_____ CFS
6 ft.	_____ AF	_____ CFS	_____ CFS

WHERE DRAWINGS & DAM SITE EQUIPMENT ARE KEPT: _____

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DATA SHEET

PERSONS DOWNSTREAM FIRST AFFECTED BY FLOOD WATERS

	<u>Name</u>	<u>Address</u>	<u>Phone</u>	<u>Number of Residents</u>
1.				
2.				
3.				
4.				
5.				
6.				

DAM INCIDENT REPORT FORM

DATE _____ TIME _____

NAME OF DAM _____

STREAM NAME _____

LOCATION _____ COUNTY _____

NATURE OF PROBLEM _____

LOCATION OF PROBLEM AREA (LOOKING DOWNSTREAM) _____

EXTENT OF PROBLEM AREA (MEASURE, PACE OR ESTIMATE) _____

ESTIMATED QUANTITY AND COLOR OR UNUSUAL FLOW _____

WATER LEVEL IN RESERVOIR _____

NAME OF PERSON WHO OBSERVED CONDITION _____

PHONE OR HOW TO CONTACT OBSERVER _____

WAS SITUATION WORSENING _____

DOES IT APPEAR TO BE AN EMERGENCY? _____

WHAT ARE CURRENT WEATHER CONDITIONS AT THE SITE? _____

OTHER: _____

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EMERGENCY PLAN

ESTIMATED TRAVEL
TIME TO SITE

1. ARRANGE FOR IMMEDIATE INSPECTION OF THE SITE:

Person Responsible _____

Person Familiar with site to make inspection _____ hr

Engineer to make inspection _____ hr.

2. ESTABLISH COMMUNICATION WITH PARTICIPATNS:

Person Responsible _____

Alternate _____

3. NOTIFY STATE ENGINEER'S OFFICE:

Water Commissioner _____ hr.

To make provision for increased flow downstream

Dam Safety Branch _____ hr.

To inspect dam and recommend or concur with remedial action

4. PROVIDE REQUIRED EQUIPMENT:

Owner can provide _____

_____ hr.

Contractor "A" can provide _____

_____ hr

Contractor "B" can provide _____

_____ hr

Highway Department can provide _____

_____ hr.

D O.D.E.S can provide _____

_____ hr.

Contractor "A" can provide _____

_____ hr

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EMERGENCY PLAN
(Continued)

6 PROVIDE REQUIRED MANPOWER

Owner can provide _____ hr.
Contractor "A" can provide _____ hr.
U S. Military can provide _____ hr.
Radio Appeal can provide _____ hr.

7. IMPLEMENT WARNING AND/OR EVACUATION.

Owner will _____ hr.
D O.D.E.S will _____ hr.
County Sheriff will _____
_____ hr.
State Patrol will _____
_____ hr.
Fire Department will _____
_____ hr

8. MEDICAL OR OTHER ASSISTANCE:

_____ will provide _____ hr

9. HELICOPTER SERVICE:

_____ will provide _____ hr

10. ENGINEERING FIRM:

_____ can provide _____ hr

11. REPORT ON ACTIONS TAKEN:

Person Responsible _____
_____ hr

DIRECTORY

OWNER'S REPRESENTATIVES RESPONSIBLE FOR PLANNED ACTION & CONTACT LOCATION:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

CITY OF: _____

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____

COUNTY SHERIFF: _____

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____

OFFICE OF THE STATE ENGINEER:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

D.O.D.E.S.

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____

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DIRECTORY
(Continued)

AMBULANCE SERVICE:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____			
2.	_____			

HELICOPTER SERVICE:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____			
2.	_____			

DIVING SERVICE:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____			
2.	_____			

OTHER:

	<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Phone</u>
1.	_____			
2.	_____			

PERSONS DOWNSTREAM FIRST AFFECTED BY FLOOD WATERS:

	<u>Name</u>	<u>Address</u>	<u>Phone</u>	<u>No. of Residents</u>
1.	_____			

2.	_____			

3.	_____			

4.	_____			

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